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ON THE

**PRINCIPLE AND APPLICATION**

OF A

**LIFE AND SHIP PRESERVER.**

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MAY, 1827.



*From the Author.*

A

BRIEF EXPLANATORY STATEMENT

OF THE

PRINCIPLE AND APPLICATION

OF A

**Life and Ship Preserver**

INVENTED, OR CONTRIVED,

BY

RALPH WATSON.

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LONDON ;

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1827.





## TO THE KING.

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SIRE,

To the benevolent consideration, and gracious patronage of YOUR MAJESTY,—the Illustrious Monarch of the mightiest Naval and Commercial Power in the World—I have presumed, with the utmost humility, to submit an Invention, or Contrivance, calculated to preserve from Shipwreck—YOUR MAJESTY's Navy,—the Mercantile Property of the Country during its traverse upon the high seas,—together with

DEDICATION.

the Lives of that class of YOUR MAJESTY's Subjects, whose valour in Arms, whose firmness under all Perils, have so eminently contributed to the Glory, Protection, and Wealth of YOUR MAJESTY's Dominions.

I have the honour to subscribe myself,

With the most profound veneration,

SIRE,

YOUR MAJESTY's most dutiful

Subject and Servant,

RALPH WATSON.

## STATEMENT, &c.

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**T**HE Principle of this Invention, or Contrivance, is established upon one of the all-perfect arrangements of Nature, for by the same elemental power which produces the buoyancy of the Whale (whose weight is known to exceed sixty tons) may the Ship, that most surprising of all the works of Man, be sustained from foundering, and its Crew from perishing in the mighty deep.

The calculations for effecting these great desiderata are formed upon the relative proportions which exist between the specific gravities of air and water, with reference to the component parts, and general contents, of a Ship.

All bodies, when immersed in a fluid, lose so much of their weight as is equivalent to an equal bulk of the fluid; hence it necessarily results that the Timber of a Ship, when bodily submerged, is reduced in its weight, or specific gravity, equal to the density of the bulk of water thereby displaced; and as timber is specifically much lighter than water, the entire Hull of a Ship, when wholly immersed, will not only unassistedly float, but support, in that position, a very considerable incumbent weight.

As respects the contents of a Ship, but more immediately the contents of a Ship of War, the supply of water, (great as it is both in bulk and weight) together with that of spirits, wine, vinegar, beer, and other fluids, produces, when immersed, no tendency to sink the Ship, but on the contrary, from these several liquids, together with the casks which contain the same, being of less specific gravity than the Sea, their conjoint buoyancy is more than sufficient to counteract the weight of the iron hoops upon the casks;—again, from other articles of the provisions on board, being, in like manner, specifically less weighty

than an equal bulk of water, and from their casks (with the exception of the few iron hoops thereon) being also lighter than that element, it follows that a very immaterial difference of relative weight exists between the specific gravity of the sea, and that of the provisions collectively, in the event of their submersion.

The only material Solids, therefore, still in reference more immediately to Vessels of War, with which the "LIFE AND SHIP PRESERVER" without the aid of any countervailing inherent buoyancy, will have to contend, are the various dense metallic substances used in the building of, and those contained within, the Ship,—such as the nails and bolts, the cannon, the ammunition, the anchors, the pumps, the ballast, the kitchen apparatus, and other iron works, &c.

As these detractions from buoyancy, which form the inseparable appendages of a Ship of War, exist in a very limited degree on board a Merchant Vessel, the principle of the proposed measure will obviously have to contend with a much less opposing power in ves-

sels of the latter description; independently of which the cargoes of Merchant Vessels are in many instances, relatively to water, of less specific gravity than is indicated by the amount of Tonnage with which they are generally laden, thereby still further favoring the more facile and economical adaptation of the “*LIFE AND SHIP PRESERVER*” to this class of vessels.

The Invention, or Contrivance, for producing a sufficient buoyancy, in order to keep Ships and Vessels, of all descriptions, afloat, in case of submersion, is the employment of hollow Globes or Cylinders, made of metal, or of other substance equally secure; the same to contain, in their aggregate number and capacity, a bulk of atmospheric air\* equal to counterbalance the weight or specific gravity of the Ship and her Contents, when immersed.

The globular shape of these Air-retaining Tubes, from its presenting against the pressure of the water, in case of immersion,

\* Lighter air could, of course, be employed, but atmospheric air is deemed sufficiently buoyant for the purpose.

the portion of an arc in every direction, and their Number, by effecting a very considerable extension of a Spherical Surface, will produce the secure attainment of the great object in view.

In regard to the application of this administering power, which it is of course indispensably necessary to effect without encroaching upon the general accommodation of the Ship, it is designed that the Globes, or Cylinders, be placed along the sides of the beams which respectively uphold the several decks, and likewise against all other equally convenient parts of the Ship.

And as a larger portion of the confined air ought of necessity to be placed against the beams, &c. of the main and lower decks of the Ship, in order that the vessel should thereby instantly free herself from all the dangerous effects of any partial, or more general, immersion, it is planned that both the number, and the dimensions of the several Globes or Cylinders shall be greater in these, than in other, divisions of the Vessel.

The numbers, lengths, and depths of the respective Beams of the Ship generally—and most fortuitously so the greater relative depths of the lower beams—afford ample space for the accomplishment of the great object in view.

Again, for the purpose of effecting an increased means of Preserving the Lives of the Crew, in the event of a Ship or Vessel being dashed to pieces by wreck on the sea coast, it is suggested that a further number of the Globes or Cylinders shall be affixed, in all commodious places, to other timbers of the Ship, which when separated by wreck will also possess an increased buoyancy, and thereby afford additional means of Preserving the Lives of the wrecked Seamen.

And with the view of protecting the lives of the Seamen against the more ordinary casualties of their avocation, it is recommended that several Pairs of hollow Globes, in capacity sufficient to support the human body when in water, should be linked together, and conveniently placed about the ship for instant application.



As regards the awful calamity of a ship or vessel taking fire at sea, the "LIFE AND SHIP PRESERVER" will effectually contribute towards staying the rapid and tremendous consequences of that devouring element, by affording the power of an instant and fearless application of water.

A still further assisting power may be obtained, by causing the empty casks which remain unbroken up, to be hermetically sealed, or closed by means of a Contrivance (likewise planned by the Inventor of the "LIFE AND SHIP PRESERVER,") which will be found easy of adjustment and removal, at the same time fully calculated to resist the outward pressure of the sea, in the event of the Ship's submersion.

So soon as confidence in the power of the "LIFE AND SHIP PRESERVER" shall have been produced, its effect, even under the greatest apparently perilous consequences from Tempest, or from Fire, will be that of dispelling all paralyzing apprehension from the breast of the Mariner, and thereby of rendering his exertions doubly effective at that awful moment,

when despair, with all its appalling consequences, have hitherto so frequently occurred.

Whilst these most highly important national advantages may be possessed by the British Merchant at a cost of comparatively immaterial amount, the “**LIFE AND SHIP PRESERVER**” will accomplish the further benefit of an essential reduction in the Rates both of *Marine* and of *Life* Insurance.

With a view of affording a practical elucidation of the efficiency of the “**LIFE AND SHIP PRESERVER**,” the Inventor has caused a Model to be constructed, in due proportion to the dimensions, and to the actual weight, or specific gravity of an Eighty Gun Ship of the Line, when equipped for a four months’ voyage.

This Model, from total submersion, becomes instantly propelled, or elevated above the surface of the water in which it floats, thereby exemplifying the means that may be used for expelling the water shipped:—Namely, first, by the application of pumps stationed

on the upper and main decks;—secondly, so soon as those decks shall have become cleared, by the employment of the chain-pumps in ejecting the remainder of the water from the lower divisions of the Ship.

It appears, from the number of British Merchant Ships and Vessels wrecked, burnt, or foundered, that the Loss resulting therefrom to the Country, averages at the appalling rate of *one and a half vessel per day*.

And, with reference to British Ships and Vessels of War, wrecked, burnt, or foundered, between the years 1793 and 1826, the following is the sad Catalogue :

Description.	Number wrecked	Number founder'd	Number burnt.
First Rates . . . . .	1	—	1
Second ditto . . . . .	1	—	2
Third ditto . . . . .	12	2	3
Fourth ditto . . . . .	8	2	1
Fifth ditto . . . . .	41	2	1
Sixth ditto . . . . .	32	—	2
Smaller Vessels of various denomi- nations . . . . .	198	61	3
Total of Ships and Vessels of War, wrecked, foundered, or burnt, between the years 1793 and 1826	293	67	13

From the above striking and most afflicting picture of loss—so immense both of *Life* and *Property* as to baffle conjecture in regard to extent—it is deemed perfectly unnecessary to expatiate upon the vast importance of a Plan, which will be found (by means of an arrangement capable of being carried into effect with facility and without inconvenience) to accomplish the preservation of the Ship and her Crew, against the perils of the deep.

It is, however, to be remarked, from the Invention, forming, as to mode, magnitude, and power, an entire novel application of a principle of Nature, the Inventor might, by means of a Patent, have secured to himself the exclusive pecuniary emolument which would have resulted from such possession.

But desirous that the great blessings which this, his Invention, or Contrivance, holds forth, may become diffused as much as possible throughout Great Britain, and her dependent Colonies, he thus freely communicates his Plan for general and *unshackled* adoption, not doubting that those who are personally interested in its great results and benefits,

(and what reflecting inhabitant of this great Maritime Country, or indeed of the Civilized World, can avoid feeling a general interest in its object) will contribute towards effecting a remuneration to the Inventor, commensurate with the good which shall be found to proceed from the adoption of the measure.

The Inventor becomes the more strengthened in this anticipation of support and encouragement, from contemplating the general liberality of His Majesty's Government, of the Legislature, and of the British Public, relatively to Works of National utility;—also, from reflecting upon the successful result of those most laudable efforts, which not long since accomplished the formation of the Royal National Institution for the Preservation of Life from Shipwreck;—an Institution which is honoured and cherished by the exalted patronage of our most gracious Sovereign, and of his illustrious family, and which is supported by the fostering care of the most distinguished Characters in the Country, aided by the bounty of a generous Nation, ever emulous to promote Works of Philanthropy.

Whilst the Shipwreck Institution, from encouraging the adoption of all practical means for the Preservation of Life from Shipwreck, greatly tends to avert the calamities resulting from Ships wrecked upon the Coasts, it cannot be doubted that the "LIFE AND SHIP PRESERVER," which not only embraces the noble object of that Institution, but assumes an infinitely wider field of operation, will in like manner experience the support and encouragement of that Society, and proceed, in co-operation with its preconcerted, and well-directed measures, in rescuing the bold Mariner from the perilous deep,

"When hostile elements tumultuous rise,  
 "And lawless floods rebel against the skies."

14, *York Place, Portman Square,*  
 12th May, 1827.









